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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/563,594

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EXAMINER

LANGMAN, JONATHAN C

ART UNIT

PAPER NUMBER

1784

NOTIFICATION DATE

DELIVERY MODE

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ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/563,594	<b>Applicant(s)</b> ONG ET AL.	
	<b>Examiner</b> JONATHAN LANGMAN	<b>Art Unit</b> 1784	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 18 January 2011.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-3,5-12,14-18,24-50,52-56 and 62-65 is/are pending in the application.
- 4a) Of the above claim(s) 28-50,52-56 and 62-65 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-12,14-18 and 24-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                    | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 5-12, 14-18, and 24-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakai et al., (WO/0023524, wherein US 6,750,283 is referenced for its English translation) in view of Payne (US 2003/0096545) or Ramirez et al. (EP 1428805).

Regarding claims 1, 5-7, 14-18 and 24, Sakai et al. teach a composite structural material comprising a natural aggregate (col. 3, lines 45-50), a polymeric binder, a curing agent (col. 7, lines 35-45), and an antimicrobial agent (col. 8, lines 59-67). Sakai teaches that the aggregate is preferably greater than 80 wt percent and less than 95% of the total weight of the composition (col. 4, lines 49-60) and the resin (polymeric binder) is preferably less than 20 wt % of the total composition (col. 5, lines 5-10) thus overlapping the instantly claimed ranges.

Since the materials are the same as instantly claimed, it is the Examiners position that the composite of Sakai will have an appearance similar to that of natural stone.

Sakai is silent to the antimicrobial agent being an organic antimicrobial agent, and only teaches inorganic materials (col. 8, lines 60-67) as viable options for the antimicrobial agent. Sakai is further silent to the antimicrobial agent exhibiting controlled migration through the binder to the surface of the composite material.

Payne teaches that antimicrobial agents are well known to those skilled in the art. And that by incorporating one or more antimicrobial agents into a composite material such as kitchen countertops results in the antimicrobial agent diffusing or migrating to the surface through the plastic such that the surface is continuously antimicrobial for years. Payne goes on to teach that Triclosan and quaternary ammonium products are all typical antimicrobial agents and well known in the art ([0005], [0007], and [0008]).

In light of Payne's teachings it would have been obvious to use either triclosan or quaternary ammonium salts as the antimicrobial agent for Sakai, as Payne recognizes that these are well known antimicrobial agents in the art, have uses in countertops, and would exhibit controlled migration to the surface through the plastic (in this case the resin binder) of Sakai, in order to allow continuous microbial action for years.

Ramirez teaches using organic antimicrobial agents mixed with cementitious aggregates, wherein Triclosan is preferred in amounts of 0.1-5.0 wt %. It would have been obvious to a person having ordinary skill in the art at the time the present invention was made to use Triclosan as an alternative antimicrobial agent in the cementitious composition of Sakai et al., since Triclosan is a known organic antimicrobial component in the art for providing biocidal protection to solid surfaces such as concrete.

Triclosan, as a substitute of the antimicrobial agent of Sakai, as proposed in the combination, results in the same composite and the same materials as instantly claimed. Therefore the composite is expected to behave in the same manner as instantly claimed, i.e. be migratory, and exhibit controlled migration through the polymeric binder to the surface of the composite. The applicant teaches that Triclosan migrates through polymeric resin binders, therefore, it is expected that the combination of Sakai with Ramirez or Payne will also produce a composite where Triclosan migrates through the polymeric binder.

Choosing an effective amount of the antimicrobial agent, to include the amounts instantly claimed is well within the grasp of a routineer in the art and would have been an obvious modification to the combination of Sakai and Ramirez or Payne.

Regarding claim 2, the natural aggregate may be granite, marble, quartz, glass, pottery etc (col. 3, lines 45-50).

Regarding claims 3 and 27, the composite comprises a filler, a pigment, or a colorant (col.3, lines 60-64 and col. 6, lines 57-65).

Regarding claims 8-12, Sakai teaches that the resin (polymeric binder) may be polyester or methyl methacrylate (col. 7, lines 40-col. 8 ,lines 50).

Regarding claims 25 and 26, Sakai teaches using the composite as a kitchen counter (col. 8, lines 62).

Claims 1-3, 5-12, 14-18, and 24-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakai et al. as applied to claims 1-13, and 19-27 above, in view of Appleton (US 6,663,877).

Regarding claims 1, 5-7 and 14-18, Sakai et al. teach a composite structural material comprising a natural aggregate (col. 3, lines 45-50), a polymeric binder, a curing agent (col. 7, lines 35-45), and an antimicrobial agent (col. 8, lines 59-67). Sakai teaches that the aggregate is preferably greater than 80 wt percent and less than 95% of the total weight of the composition (col. 4, lines 49-60) and the resin (polymeric binder) is preferably less than 20 wt % of the total composition (col. 5, lines 5-10) thus overlapping the instantly claimed ranges.

Since the materials are the same as instantly claimed, it is the Examiners position that the composite of Sakai will have an appearance similar to that of natural stone.

Sakai teaches a composite comprising an inorganic antimicrobial agent. Sakai is silent to the use of organic antimicrobial agents. Appleton teaches a composite material in the same art as Sakai (col. 2, lines 40-65). Appleton goes on to teach that the antimicrobial agent may be inorganic, organic, or combinations thereof, with the inorganic materials overlapping those taught by Sakai (col. 8, lines 60-67), and the organic antimicrobial agents comprising Triclosan (col. 3, line 45- col. 4, lines 40). Appleton teaches that the amount of antimicrobial agent is 0.1 or 0.5% or more, thereby overlapping the instantly claimed ranges. It would have been obvious to a person having ordinary skill in the art at the time the present invention was made to use

Art Unit: 1784

inorganic antimicrobial agents such as Triclosan, as an alternative antimicrobial agent in the cementitious composition of Sakai et al., since Appleton has shown that organic antimicrobial agents, such as Triclosan, are functionally equivalent and interchangeable with the inorganic antimicrobial agents taught by Sakai.

Appleton is silent to the exact ranges of organic antimicrobial agents instantly claimed. However as admitted by the applicant on paragraph ([0046] and [0047]).

"Those skilled in the art are capable of matching the appropriate antimicrobial material with the appropriate binder. Likewise those skilled in the art are capable of determining the appropriate loading of antimicrobial agent into the composite structural material".

Therefore a routineer in the art would have found it obvious to choose polyester as a binder and Triclosan as an antimicrobial agent, in the amounts instantly claimed, as it has been shown that determining these constituents and loading amounts only involves routine skill in the art.

Regarding claim 2, the natural aggregate may be granite, marble, quartz, glass, pottery etc (col. 3, lines 45-50).

Regarding claims 3 and 27, the composite comprises a filler, a pigment, or a colorant (col.3, lines 60-64 and col. 6, lines 57-65).

Regarding claims 8-12, Sakai teaches that the resin (polymeric binder) may be polyester or methyl methacrylate (col. 7, lines 40-col. 8 ,lines 50).

Regarding claim 24, Sakai teaches overlapping ranges and therefore it is expected that the antimicrobial agent is present in an amount sufficient to demonstrate commercially acceptable efficacy against a microbe of concern.

Regarding claims 25 and 26, Sakai teaches using the composite as a kitchen counter (col. 8, lines 62).

### ***Response to Arguments***

#### **Appleton in view of Sakai**

Applicant argues on pages 2-6 of the remarks submitted July 21, 2010, that it would not have been obvious to substitute the amount of aggregate as disclosed by Appleton, specifically 25 % up to about 75% by weight, for the amounts of 80-95 percent by weight aggregate as disclosed by Sakai et al. The examiner agrees with the applicant and the rejection of claims 1-3, 5-12, 14-18, and 24-27 under 35 U.S.C. 103(a) as being unpatentable over Appleton et al. and Sakai et al. is withdrawn.

#### **Sakai in view of Ramirez or Payne**

On pages 7-8 of the remarks submitted July 21, 2010, the applicant argues against the combination of Sakai with Ramirez or Payne. Applicant incorrectly states that the "Examiner admits that Sakai fails to disclose antimicrobial agent". As discussed in the rejection Sakai fails to teach an organic antimicrobial agent, which the examiner contends is implicitly implied by the fact that the antimicrobial agent of the instant claims is "migratory".

Applicant argues that Sakai et al. teaches inorganic antimicrobial agents that are not soluble in resin and therefore will be disposed on the surface of the composite material. The examiner agrees, however, Ramirez and Payne were looked to for this deficiency in Sakai et al.



Applicant argues that there is no motivation in the art to utilize Triclosan in the composite of Sakai. The examiner disagrees.

In light of Payne's teachings it would have been obvious to use either Triclosan or quaternary ammonium salts as the antimicrobial agent for Sakai as Payne recognizes that these are well known antimicrobial agents in the art, have uses in countertops, and would exhibit controlled migration to the surface through the plastic (in this case the resin binder) of Sakai, in order to allow continuous microbial action for years.

Ramirez's teaches that using organic antimicrobial agents mixed with cementitious aggregates, wherein Triclosan is preferred in amounts of 0.1-5.0 wt %, is known in the art, and therefore it would have been obvious to a person having ordinary skill in the art at the time the present invention was made to use Triclosan as an alternative antimicrobial agent in the cementitious composition of Sakai et al., since Triclosan is a known antimicrobial component in the art for providing biocidal protection to solid surfaces such as concrete.

Applicant asserts that if Triclosan were used as an antimicrobial agent in the composite of Sakai, Triclosan will also be disposed on the surface of the composite. Applicant asserts that "even if one skilled in the art were to substitute the Triclosan, as taught by Ramirez or Payne in the composite of Sakai, the resulting composite cannot comprise a migratory antimicrobial agent". However, it is noted that "the arguments of counsel cannot take the place of evidence in the record", *In re Schulze*, 346 F.2d 600, 602, 145 USPQ 716, 718 (CCPA 1965). It is the examiner's position that the arguments provided by the applicant regarding the inability of Triclosan to migrate if substituted for

Art Unit: 1784

the inorganic antimicrobial agent in the composite of Sakai et al. must be supported by a declaration or affidavit. As set forth in MPEP 716.02(g), "the reason for requiring evidence in a declaration or affidavit form is to obtain the assurances that any statements or representations made are correct, as provided by 35 U.S.C. 24 and 18 U.S.C. 1001".

Sakai in view of Appleton

On pages 8-9 of the arguments submitted July 21, 2010, the applicant argues that there is no suggestion or teaching in Appleton of antimicrobial agent migration. The examiner agrees. However, Appleton is not relied upon for this teaching. Appleton is relied upon for its teaching of equivalence of inorganic antimicrobial agents such as those taught by Sakai, with organic antimicrobial agents, such as Triclosan, and it is the examiners position that it would have been obvious to one of ordinary skill in the art at the time of the present invention to substitute inorganic antimicrobial agents of Sakai with organic antimicrobial agents as disclosed by Appleton, as they have been shown to be known and functionally equivalent in providing antimicrobial effectiveness in aggregate composite materials.

Absent a showing otherwise the organic Triclosan antimicrobial agent taught by Appleton is expected to be "migratory" when substituted for the antimicrobial agent taught by Sakai et al. as it has been held that similar materials will yield similar results.

Applicant provided a declaration on January 18, 2011, the declaration has been considered but not found persuasive. The declaration is drawn to a comparison of

Art Unit: 1784

Appleton. The declaration compares one example of Appleton, which comprises an antimicrobial agent comprising inorganic silver, and shows that this sample does not have antimicrobial effectiveness, in that the antimicrobial substance is depleted after a test. However, as described above, the rejection over Appleton as a primary reference is withdrawn.

Furthermore, the declaration provides examples of a composite with 61% aggregate, and 28% filler. 61% aggregate falls outside the claimed aggregate percentage of 85-96 percent by weight and therefore the declaration is not commensurate with the scope of the claims.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Art Unit: 1784

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JONATHAN LANGMAN whose telephone number is (571)272-4811. The examiner can normally be reached on Mon-Thurs 8:00 am - 6:30 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on 571-272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JCL

/Jennifer C McNeil/  
Supervisory Patent Examiner, Art Unit 1784